

current is applied. On the other hand, electrochromic devices become opaque when a current is applied and transparent when little or no current is applied. Additionally, light valve **18e** may attain varying levels of translucency and opacity. For example, while a PDLC device is generally either transparent or opaque, suspended particle devices and electrochromic devices allow for varying degrees of transparency, opacity or translucency, depending on the applied current level.

[0046] In one embodiment, the gaming machine includes a touchscreen **16** disposed outside the exterior video display device **18a**. Touchscreen **16** detects and senses pressure, and in some cases varying degrees of pressure, applied by a person to the touchscreen **16**. Touchscreen **16** may include a capacitive, resistive, acoustic or other pressure sensitive technology. Electrical communication between touchscreen **16** and the gaming machine processor enable the processor to detect a player pressing on an area of the display screen (and, for some touchscreens, how hard a player is pushing on a particular area of the display screen). Using one or more programs stored within memory of the gaming machine, the processor enables a player to activate game elements or functions by applying pressure to certain portions of touchscreen **16**. Several vendors known to those of skill in the art produce a touchscreen suitable for use with a gaming machine. Additionally, touchscreen technology which uses infrared or other optical sensing methods to detect screen contact in lieu of pressure sensing may be employed, such as the proprietary technology developed by NextWindow Ltd. of Auckland, New Zealand.

[0047] Rear video display device **18d** includes a digital video display device with a curved surface. A digital video display device refers to a video display device that is configured to receive and respond to a digital communication, e.g., from a processor or video card. Thus, OLED, LCD and projection type (LCD or DMD) devices are all examples of suitable digital display devices. E Ink Corporation of Cambridge Mass. produces electronic ink displays that are suitable for use in rear video display device **18d**. Microscale container display devices, such as those produced SiPix of Fremont Calif., are also suitable for use in rear video display device **18d**. Several other suitable digital display devices are provided below.

[0048] Pixilated element panels on many non-emissive displays such as LCD panels are largely invisible to a viewer. More specifically, many display technologies, such as electroluminescent displays and LCD panels, include portions that are transparent when no video images are displayed thereon. An electroluminescent display may utilize non-organic phosphors that are both transparent and emissive (such as a IOLED), and addressed through transparent row and column drivers. Pixilated element panels on LCD panels are also available in significantly transparent or translucent designs that permit a person to see through the pixilated panels when not locally displaying an image. FIGS. **5A** and **5B** show sample window portions **15** of proximate display device **18a** that are transparent. The window portions **15** may be any suitable shape and size and are not limited to the sizes and arrangements shown.

[0049] If used, corresponding portions of touchscreen **16** and light valve **18e** along the lines of sight for portions **15** are also translucent or transparent, or alternatively have the capacity to be translucent or transparent in response to control signals from a processor included in the gaming machine.

When portions (or all) of the screens for touchscreen **16**, video display devices **18a** and **18b**, and light valve **18e** are transparent or translucent, a player can simultaneously see images displayed on the display screen **18a** (and/or **18b**)—as well as the images displayed on the interior display devices **18c**—by looking through the transparent portions **15** of proximate display devices.

[0050] In another embodiment, the layered video display devices in a gaming machine include a design or commercially available unit from Pure Depth of Redwood City, Calif. The Pure Depth technology incorporates two or more LCD displays into a physical unit, where each LCD display is separately addressable to provide separate or coordinated images between the LCDs. Many Pure Depth display systems include a high-brightened backlight, a rear image panel, such as an active matrix color LCD, a diffuser, a refractor, and a front image plane; these devices are arranged to form a stack. The LCDs in these units are stacked at set distances.

[0051] Additional planar elements may be interposed between the proximate and distal display devices. These elements may consist of various films and/or filters that alter the optical characteristics of light, after passing through the distal transmissive video display device, and before it reaches a rear surface of the proximate transmissive video display device. The digital nature of a display panel decomposes an analog image into a series of discrete colored picture elements, known as “pixels”, which normally combine seamlessly and are interpreted by the eye as equivalent of their analog original format. However, when more than one digital image is disposed along a common line of sight, undesired visual artifacts may result from the alignment of the pixels in the digital images—since one panel is essentially viewed through the other. A change in either of the images or in the viewing position may create an interference pattern which may appear as a moving or strobing effect on the images and, in many cases, may degrade them. One such effect, known as moire, is very similar to the interference effects produced by multiple transmissive digital display devices.

[0052] To reduce visual effects attributable to layered digital transmissive digital video display devices, interstitial elements may be placed between the devices to diminish the digital nature of the image output by a distal display. By partially obscuring the individual pixels and blending them into a more analog-like visual image, the potential for undesired visual interference patterns may be reduced to an imperceptible level. Further, other optical properties, including but not limited to the polarization and color balance of the light passing between the transmissive digital display devices, may be controlled using a film or panel disposed within the gap between display devices.

[0053] Although the examples described herein display systems that include layered video display devices for a primary display located centrally in a gaming machine, those of skill in the art will recognize that display systems described herein are applicable towards other areas of a gaming machine, such as a top glass or a belly glass.

[0054] The layered video display devices **18** may be used in a variety of manners to output video graphics and games on a gaming machine. In one embodiment, the video graphics are separable, which means that video output for a game is programmed to co-act and use multiple video display devices **18** for game output. In some cases, video data and images displayed on video display devices **18a** and **18c** are positioned